Small Business Innovation Research/Small Business Tech Transfer

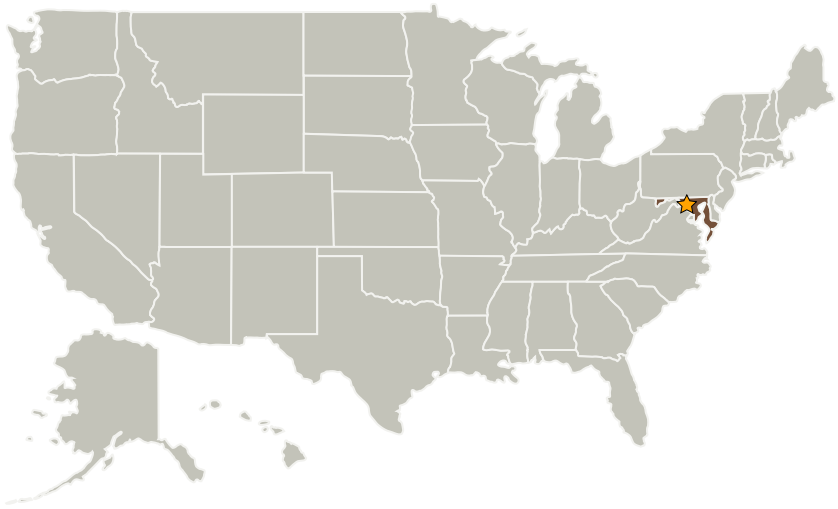
Ad-hoc Content-based Queries and Data Analysis for Virtual Observatories, Phase II

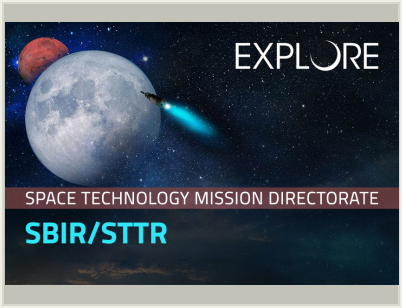
Completed Technology Project (2005 - 2007)

Project Introduction

Aquilent, Inc. proposes to support ad-hoc, content-based query and data retrieval from virtual observatories (VxO) by developing 1) Higher Order Query Services that will work together with the Virtual Space Physics Observatory (VSPO) effort. These services will enable scientists to generate derived quantities and event-lists interactively based on existing science data and existing temporal and phenomenal event lists, as well as perform discontinuity and correlation analysis of time series derived from local low/medium resolution datasets. The framework architecture will be designed so that it can be adapted and extended for application to other VxO's. 2) Develop a metadata/data access toolkit that enables visualization and data analysis clients to browse VxO resources directly and retrieve discovered data from the source (PI) archive and demonstrate the capability through extensions to the VSPO Gateway API using VisBARD. 3) Support the creation, validation, and maintenance of product description metadata for VxO's through simplified metadata management tools whose configuration is driven by the same XML Schema that defines the VxO's data model. The tools include a configurable metadata editor backed by a central repository and XSLT (eXtensible Stylesheet Language Transformations) utility scripts. The XSLT scripts enable generation of the tool configuration schema from a master XML Schema, output of product metadata that complies with the VxO data model, and partially automate the update process for product description metadata as the VxO and SPASE data models evolve.

Primary U.S. Work Locations and Key Partners





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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Aquilent	Supporting Organization	Industry	Laurel, Maryland

Primary U.S. Work Locations
Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.7 High Performance Data Analytics Platform